CLAIMS

What is claimed is:

1. An information storage medium on which video data are recorded, comprising:

a plurality of clips that are recording units in which the video data are stored; and

text data for subtitles which are recorded separately from the plurality of clips and overlappable with an image according to the video data and then outputtable, the text data including data for providing subtitles in at least one language.

2. The information storage medium of claim 1, further comprising character font data, which are recorded separately from the plurality of clips, for graphic expression of the text data and which are usable in the text data.

3. The information storage medium of claim 1, wherein, when the text data is of multiple languages, the text data are recorded in separate spaces for each of the multiple languages.

4. The information storage medium of claim 1, wherein the text data includes character data which are convertible into graphic data and output synchronization information for synchronizing the graphic data with the video data.

5. The information storage medium of claim 1, wherein the text data includes character data which are convertible into graphic data and output location information indicating a location in which the graphic data is to be displayed when the graphic data is overlapped with an image according to the video data.

6. The information storage medium of claim 1, wherein the text data includes character data which are convertible into graphic data and information for expressing the output of the graphic data in a plurality of sizes when the graphic data is overlapped with an image.

7. The information storage medium of claim 1, wherein the video data are divided into units that are continuously reproducible, and a size of all of the text data corresponding to one unit is limited.

8. The information storage medium of claim 1, wherein the video data is divided into a plurality of units that are continuously reproducible, the text data corresponding to each reproducing unit being divided into a plurality of language sets, and a size of all of the text data forming one language set being limited.

9. The information storage medium of claim 1, wherein the data forming the text data are expressed and recorded in Unicode for supporting multi-language character sets.

10. The information storage medium of claim 9, wherein, when the text data for subtitles are formed only with characters of one of ASCII, which is a basic English character set, and ISO8859-1, which is a Latin-extended character set, the text data being coded and recorded by using UTF-8 by which one character is coded into a plurality of 8-bit units.

11. The information storage medium of claim 9, wherein, when the text data includes a character having a code point value of a 2-byte size in Unicode, the text data being coded and recorded by using UFT-16 by which one character is coded into a plurality of 16-bit units.

12. The information storage medium of claim 1, wherein the information storage medium is a removable type.

13. The information storage medium of claim 12, wherein the information storage medium is an optical disc which is readable by an optical apparatus of the reproducing apparatus.

14. A reproducing apparatus which reproduces data from an information storage medium on which video data is recoded, the video data being coded and divided into clips that are recording units and recorded in a plurality of clips and on which text data for subtitles that are formed with data of a plurality of languages and are overlappable as graphic data with an image based on the video data, the text data being recorded separately from the clips, the reproducing apparatus comprising:

a data reproducing unit which reads data from the information storage medium;
a decoder which decodes the coded video data;
a renderer which converts the text data into graphic data;
a blender which overlays the graphic data with the video data to generate an image;
a first buffer which temporarily stores the video data; and
a second buffer which stores the text data.

15. The reproducing apparatus of claim 14, wherein font data are stored in a third buffer and are usable in the text data for graphic expression of the text data and are recorded separately from the clips on the information storage medium, and the renderer converts the text data into graphic data using the font data.

16. The reproducing apparatus of claim 14, wherein, when the text data are data of multiple languages, the text data are recorded in separate spaces for each of the languages, wherein text data for a language that is one of selected by a user and set as an initial reproducing language s are temporarily stored in the second buffer, wherein font data for converting the text data into graphic data are temporarily stored in the third buffer, and wherein, simultaneously, while reproducing video data, the text data is converted into graphic data and the graphic data is output.

17. The reproducing apparatus of claim 14, further comprising a controller which controls an output start time and end time of the text data using synchronization information, wherein on the information storage medium are recorded the text data which includes the synchronization information, by which the text data are converted into graphic data which are overlapped with an image based on the video data.

18. The reproducing apparatus of claim 14, further comprising a controller which controls a location where the text data is overlapped with an image based on the video data using output location information, wherein on the information storage medium are recorded the text data includes character data which are convertible into graphic data, and the output location information indicating a location where the graphic data is to be output when the graphic data is overlapped with an image based on the video data.

19. The reproducing apparatus of claim 16, wherein the video data recorded on the information storage medium are divided into units that are continuously reproducible, and within a limited size of all of the text data corresponding to the recording unit, the text data are recorded, wherein all of the text data whose size is limited is stored in the second buffer before reproducing the continuously reproducible units, and when a language change occurs during reproduction, subtitle data corresponding to the language stored in the buffer is output.

20. The reproducing apparatus of claim 16, wherein the video data is divided into units that are continuously reproducible, the text data corresponding to one unit are divided into a plurality of language sets, the text data for subtitles forming the one language set are recorded so that all of the text data is limited, wherein the text data corresponding to a language set containing the subtitle data which are output simultaneously with video data, are stored in the buffer before reproducing the unit that is continuously reproducible, and when a language change occurs during reproduction, when the text data for the language are in the buffer, the text data for the language are output, and when the text data for the language are not in the buffer, the text data corresponding to the language set containing the text data for the language are stored in the buffer and the text data for the language are output.

21. The reproducing apparatus of claim 14, further comprising a subtitle size selector which selects a size of the subtitle data based on a user input, wherein the text data includes character data, which are convertible into graphic data, and information indicating the output of a plurality of graphic data items when the graphic data is overlapped with an image based on the video data are recorded on the information storage medium.

22. The reproducing apparatus of claim 14, wherein on the information storage medium, data forming the text data is expressed and recorded in Unicode for supporting multi-language sets, and the renderer converts the characters expressed in Unicode into graphic data.

23. The reproducing apparatus of claim 22, wherein on the information storage medium, when the text data for subtitles are formed only with characters of one of ASCII, which is a basic English character set, and ISO8859-1, which is a Latin-extended character set, the text data being coded and recorded by using UTF-8 by which one character is coded into a plurality of 8-bit units, and the renderer converts the characters expressed by UFT-8 into graphic data.

24. The reproducing apparatus of claim 22, wherein on the information storage medium, when the text data includes a character having a code point value of a 2-byte size in Unicode, the text data are coded and recorded by using UFT-16 by which one character is coded into a plurality of 16-bit units, and the renderer converts the characters expressed by UTF-16 into graphic data.

25. The reproducing apparatus of claim 14, wherein the information storage medium is a removable type, and the reproducing apparatus reads data from and reproduces data on the removable information storage medium.

26. The reproducing apparatus of claim 25, wherein the information storage medium is an optical disc which is readable by an optical apparatus of the reproducing apparatus, and the reproducing apparatus reads and reproduces data recorded on the optical disc.

27. The reproducing apparatus of claim 14, wherein the reproducing apparatus outputs the graphic data without reproducing video data recorded on the information storage medium.

28. The reproducing apparatus of claim 27, wherein the subtitle data further comprises subtitle data for one or more languages, the renderer converts text data for the one or more languages into graphic data.

29. The reproducing apparatus of claim 27, wherein the subtitle data are synchronously overlapped with a video image and then output.

30. A recording apparatus which records video data on an information storage medium, comprising:

a data writer which writes data on the information storage medium;

an encoder which codes video data;

a subtitle generator which generates subtitle data addable to the video data;

a central processing unit (CPU);

a fixed-type storage; and

a buffer,

wherein the video data is stored in the fixed-type storage after the encoder divides video images into clips that are recording units and compression encodes the clips,

wherein the subtitle generator generates subtitle data for a plurality of languages in the form of a text, the subtitle data being reproducible together with an image based on the video data and stored in the fixed-type storage,

wherein the buffer temporarily stores the data stored in the fixed-type storage,

wherein the data writer records the coded video data and subtitle data that are temporarily stored in the buffer on the information storage medium, and

wherein the CPU controls encoding of the video data, recording the coded video data and the subtitle data in respective separate areas on the information storage medium.

31. The recording apparatus of claim 30, further comprising a font data generator which generates font data for converting text data for subtitles into graphic data,

wherein the font data generator generates font data needed for converting the subtitle data into graphic data, and stores the font data in the fixed-type storage, the buffer temporarily stores the font data stored in the fixed-type storage, the data writer records the font data temporarily stored in the fixed-type storage on the information storage medium, and the CPU controls the generating of the font data and recording the font data in separate areas of the information storage medium.

32. The recording apparatus of claim 30, wherein, when the text data are data of multiple languages, the CPU controls the subtitle data so that the subtitle data are recorded in a separate space for each language.

33. The recording apparatus of claim 30, wherein the subtitle generator generates the subtitle data by including character data which are convertible into graphic data and then output and output synchronization information for synchronizing with reproduction of the video images.

34. The recording apparatus of claim 30, wherein the subtitle generator generates the subtitle data by including character data which are convertible into graphic data and output location information indicating a location where the graphic data will be output when the graphic data is overlapped with an image based on the video data.

35. The recording apparatus of claim 30, wherein the subtitle generator generates the text data by including character data which is convertible into graphic data and information for expressing the output of the graphic data with a plurality of sizes when the graphic data is overlapped with an image based on the video data.

36. The recording apparatus of claim 30, wherein the coded video data is divided into recording units that are continuously reproducible, and the subtitle generator generates the text data so that a size of all of the subtitle data corresponding to the recording unit is limited.

37. The recording apparatus of claim 30, wherein the coded video data is divided into recording units that are continuously reproducible, and after the text data corresponding to the recording unit are divided into a plurality of language sets, the subtitle generator generates the text data so that a size of the entire subtitle data forming the one language set is limited.

38. The recording apparatus of claim 30, wherein the subtitle generator generates data forming the text data in Unicode for supporting multi-language character sets.

39. The recording apparatus of claim 37, wherein the subtitle generator encodes by using UTF-8 by which one character is coded into a plurality of 8-bit units when the text data are formed only with characters of one of ASCII, which is a basic English character set, and ISO8859-1, which is a Latin-extended character set.

40. The recording apparatus of claim 37, wherein the subtitle generator encodes by using UFT-16 by which one character is coded into a plurality of 16-bit units when the text data includes a character having a code point value of a 2-byte size in Unicode.

41. The recording apparatus of claim 30, wherein the information storage medium is a removable type.

42. The recording apparatus of claim 41, wherein the information storage medium is an optical disc.

43. A method of reproducing data stored on an information storage medium, comprising:

reading audio-visual (AV) data and text data;
rendering subtitle image data from the text data;
decoding the AV data and outputting decoded AV data; and
blending the subtitle image data and the decoded AV data.

44. The method of claim 43, further comprising synchronizing the subtitle image data with the video information using synchronization information included in the decoded AV data.

45. The method of claim 43, wherein the text data includes display area information, display style box information, and information indicating a language.

46. The method of claim 45, wherein the display area information designates a location on which rendered subtitle image data are displayed on a screen.

47. The method of claim 45, wherein the display style box information contains information regarding at lest one of a size of displayed characters, a writing of rendered subtitle image data in horizontal lines and/or vertical lines, an arrangement, colors, and a contrast in the display area.

48. The method of claim 43, further comprising loading the subtitle data into a buffer.

49. The reproduction apparatus of claim 43, wherein the AV data, the text data, and the font data are stored in an information storage medium readable by the reading section.

50. The reproduction apparatus of claim 43, wherein the blending yields a video image having subtitles displayed thereon.

51. A reproducing apparatus comprising:

a reading section which reads audio-visual (AV) data, text data, and font data;

a decoder section which decodes the AV data and outputs moving picture data;

a rendering section which renders subtitle image data from the text data; and

a blending section which synthesizes the moving picture data with the subtitle image data.

52. The reproduction apparatus of claim 51, further comprising a buffer section which buffers data between the reading section and the decoding and rendering sections.

53. The reproduction apparatus of claim 51, wherein the AV data, the text data, and the font data are stored in an information storage medium readable by the reading section.

54. The reproduction apparatus of claim 51, wherein at least one of the text data and the font data are stored in a downloadable database.

55. The reproduction apparatus of claim 51, wherein the AV data is stored in an information storage medium readable by the reading section.

56. The reproduction apparatus of claim 51, wherein the rendering section finds a font matching a character code of each character in the text data, the fonts being stored in one of a downloadable database and in a storage section of the apparatus.

57. The reproduction apparatus of claim 51, wherein the text file includes data for each of one or more languages and the text data contains information indicating one of the one or more languages.

58. The reproduction apparatus of claim 51, wherein, when the text file includes data for each of one or more languages, the text data is one of stored as multiplexed data in an area and stored in separate areas for each of the one or more languages.

59. A reproducing apparatus comprising:

a reading section which reads text data and font data;

a rendering section which renders subtitle image data from the text data;

an outputting section which outputs the subtitle image data; and

an input receiving section which receives an input to subtitle data for a next line so as to control the output time of the subtitle data.

60. The apparatus of claim 59, wherein the text data and the font data are for a plurality of languages, the subtitle information includes synchronization information for each of the plural languages, and subtitle data two or more of the plurality of languages are output at the same time.

61. A data recording and/or reproducing apparatus comprising:

a storage section;

an encoder which codes audio-visual (AV) data to yield coded AV data;

a subtitle generator which generates renderable text data for subtitles;

a data writer which writes the coded AV data and the renderable text data onto the storage section;

a reading section which reads the coded AV data and the rederable text data;

a decoder section which decodes the coded AV data so as to yield moving picture data;

a rendering section which renders subtitle image data from the renderable text data; and a blending section which synthesizes the moving picture data with the subtitle image data so as to yield blended moving picture data.